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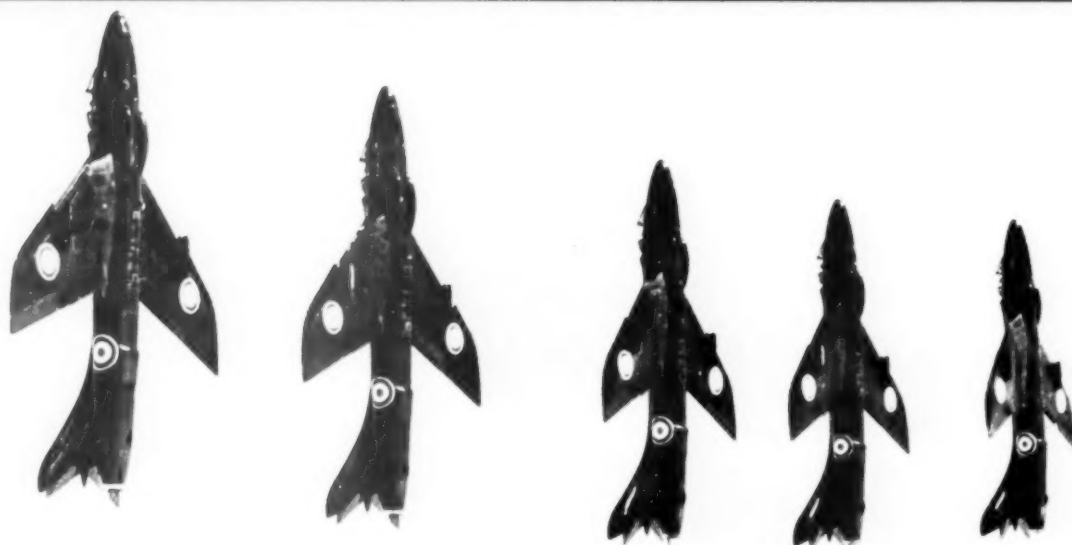
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May 31, 1958

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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Jet Aerobatics

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A SCIENCE SERVICE PUBLICATION

ASTRONAUTICS

Space Man May Be Sleepy

The possible effects on man of traveling through space are being investigated. Scientists find that weightlessness may make space men sleepy.

► THE WEIGHTLESSNESS space travelers will encounter might put them to sleep.

This is a speculation, Dr. C. M. Brooks of the department of physiology of the State University of New York told a press conference following a closed session of the Symposium on the Possible Uses of Earth Satellites for Life Sciences Experiments meeting in Washington.

It can only be a speculation, Dr. Brooks stressed, because weightlessness cannot be duplicated on earth for a period longer than 40 seconds or, at most, one minute.

We are anti-gravity people, he explained, and possess an anti-gravity center in our brain. This center is constantly being bombarded with signals from the muscle labyrinths and this bombardment is important because it keeps the anti-gravity and other brain centers active.

Orthodox physiologists, Dr. Brooks pointed out, think that this bombardment thereby keeps us awake. Weightlessness, on the other hand, reduces the bombardment and may very well "reduce the drive that keeps us alert." It could very well cause the person who encounters weightlessness to go to sleep.

Further evidence on the effects of weightlessness have been demonstrated in experiments with mice at Holloman Air Force Base in New Mexico, Dr. Harald J. von Beckh reported.

By returning to an "older aeromedical laboratory, the aircraft," Dr. von Beckh said, Holloman scientists have been able to duplicate weightlessness for one minute. They have also been able to test an animal's reaction to both acceleration and weightlessness by sending a plane into a diving steep angle spiral and then into a parabola.

A "surprise" finding when mice were subjected to the acceleration-weightlessness tests, Dr. von Beckh said, was that recovery from acceleration unconsciousness or "blackout" becomes complicated and takes longer if the acceleration is followed by weightlessness. The possible explanations for this might be a general muscle relaxation, such as a person feels when he jumps off a high diving board, and upsetting of the blood pressure sensing and regulating mechanism in the animal.

Propose Nuclear Batteries

► NUCLEAR BATTERIES appear to be the most promising source of power for the electrical and electronic systems within satellites and space vehicles.

The nuclear batteries being developed act as thermoelectric converters, Harold Zahl of the U. S. Army Signal Engineering Laboratory, Fort Monmouth, N. J., explained. Radiation energy from an isotope is used to

produce heat and then to convert the heat with thermocouples into electrical power.

The batteries have demonstrated two big advantages in their favor—they produce a high current and have a very low current drain.

Mr. Zahl stated to a closed session of the symposium that "it is expected that operational models of sufficient power output will be available in the very near future."

The output ratings of some of the experimental batteries, he pointed out, have been between 500 and 2,000 watt hours per pound, depending on the isotope used.

Cesium-144, when used as a power source, for example, produced the lower figure, whereas polonium-210, produced the higher rating.

Nuclear batteries boast another advantage for use in satellites. They provide a long life for the power source, a need, he added, that was made obvious by the power failure of the Russian sputnik instrumentation when compared to the life of the sputniks themselves. Cesium-144 can operate for 290 days and polonium-210 for 136 days before their output drops 50% as determined by their half-lives.

Mr. Zahl also described the advantages and disadvantages of the other power sources available, including the man-made chemical batteries, fuel energy devices and mechanical energy storage devices and the naturally available solar energy.

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MECHANICAL ENGINEERING

Engines in Arctic Ruined By Lack of Good Lubricant

► ENGINES used in sub-zero Arctic weather must be discarded long before their normal life spans are passed because no one has yet invented the "ideal lubricant" for the Arctic.

Engineers on Arctic projects have found it is easier to throw away hard-working engines after only short use than to try to lubricate them properly.

The problem is that heavy and medium weight oils congeal in subfreezing weather and engines will not turn over enough to start. On the other hand, lightweight oils do not offer enough protection to the engines, Earl J. Beck Jr., project engineer, U. S. Naval Civil Engineering Research and Evaluation Laboratory, Port Huene, Calif., reported at a meeting of the American Society of Mechanical Engineers in Philadelphia.

One compromise has been worked out in the Antarctic by International Geophysical Year engineers, Mr. Beck said.

They use two engines on each piece of equipment. One is the large engine that powers the truck, tractor or other equipment; the other is a small engine just powerful enough to turn the large engine in starting.

The large engine is properly lubricated for long life, Mr. Beck reported, and the small engine is very lightly lubricated. The small engine "cranks" the large one until oil is flowing freely.

The ideal lubricant for which scientists are searching was described by Mr. Beck as "a golden oil that would pour at any temperature." Until such an oil is found, he said, "modification of a starting engine that could be hand cranked seems most appropriate."

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PHARMACOLOGY

Doctors Can Help Prevent Suicides by Poisoning

► PRESCRIPTION drugs, especially barbiturates, are the main poisons used in suicides. For this reason the physician is often in a position to prevent such attempts, an internal medicine specialist told the Illinois State Medical Society meeting in Chicago.

Neither justifiable nor honorable suicide exist in our culture, Dr. Frank B. Norbury of the Norbury Sanatorium, Jacksonville, Ill., pointed out. Therefore, suicides must be considered to be a product of mental disease or personality aberration.

Dr. Norbury listed these three characteristic ways of attempting suicide:

1. "Impulse consumption," which is the most frequent. The person reacts to an overwhelming situation by impulsively emptying the medicine cabinet of all available sedatives. The severity of the poisoning will depend in part upon the amount of sedatives already in the medicine cabinet. Barbiturates, salicylates and opiates are often taken in this manner.

2. "Calculated consumption," whereby a lethal or near-lethal dose is carefully calculated in advance. This indicates a serious suicidal trend and risk of other attempts in the future.

3. "Serial consumption," in which the person takes his usual sedative in a somewhat larger dose because of more severe anxiety or impatience. This weakens his defenses so that a suicidal thought becomes more dominant.

Suicidal trends often accompany symptoms that are of an emotional nature or are vague and nonspecific, the specialist said. Depression, impulsive behavior, obsession with insomnia, deficiencies in judgment, and alcoholism are signs which should warn the attending physician to use caution in prescribing large doses of sedatives. This includes limitations on both amounts and refills.

The patient-physician relationship can also be a powerful factor in suicide prevention, Dr. Norbury said. Patients often like to discuss their depressed feelings and suicidal thoughts if the opportunity is offered them. The physician can listen carefully and judiciously question the patient.

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TECHNOLOGY

Pushbutton Warfare Now

Remote-controlled airplanes, tanks, jeeps and landing craft now being tested in military maneuvers point to the possibility of pushbutton warfare with less danger to human lives.

► **PUSHBUTTON WARS** fought by unmanned, remote-controlled tanks, jeeps, airplanes and landing craft have been taken from the future and made present possibilities.

Already military maneuvers, "war games," have been fought in part by advanced and, until now, secret equipment. Mock battles have been held "very successfully," and new equipment has been subjected to rigorous tests "without endangering the lives of human operators," military officials and defense contractors told *SCIENCE SERVICE*.

Television-equipped forward reconnaissance jeeps are able to penetrate enemy lines, scan defenses and send information back to commanders many miles away. The "drivers" of the unmanned jeeps are located within the safety of their own lines.

One recent development is a Marine Corps amphibious landing vehicle controlled from a helicopter hovering overhead.

Officials of Lear, Inc., Grand Rapids, Mich., who devised the electromechanical control linkages that convert radio signals into the "muscle work needed for steering, braking and throttle operation," said the development not only puts troop and equipment landings into the pushbutton warfare field, but also saves lives during tests of new equipment.

Low-flying helicopters have controlled new LVT (Landing Vehicle, Tracked) models through pounding surf and tricky currents at Monterey and Camp Pendleton, Calif., without risking the lives of human test drivers, a Lear official said.

The same vehicles, carrying supplies or reconnaissance television cameras, could be operated by "drivers" on ships several miles away, out of range of shore weapons, one Lear official said.

"This equipment can be operated from a range of at least up to 50 miles, and depends

only on the strength of the transmitted radio control signal.

"There is no reason why Army tanks equipped with almost the same remote control equipment and TV eyes could not fight pitched battles far from the control centers," he said.

The newest remote control equipment is "almost identical in principle and very similar in its mechanics" to that controlling "drone" anti-aircraft target planes.

The major differences are in considerations of weight, space, and the force required for operating the controls. Engineers also had to develop satisfactory waterproofing for the Marine Corps landing vehicle equipment.

The Army recently announced a line of remote controlled target aircraft, at least one of which is being tested as a camera-carrying "spy" for use over enemy territory.

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BIOLOGY

Embryo Chick Survives Head Transplanting

► A chick that lost its head but received a new one in its place is helping scientists discover the secrets of tissue and cell differentiation.

Six chicks from among 100 Rhode Island Red embryos have survived an operation in which they received head tissue from another breed of chicken and hatched. One chick with a transplanted head lived 70 days, believed to be a world record, Yale University has reported.

The transplants were made by Mira Pavlovic, a Yugoslav biologist and research associate at Yale University. They were made within 33 to 40 hours after incubation, before the chick embryo's circulation system was established. This proves, according to some scientists, that early in embryonic development the tissues of different hosts are compatible—one head took the place of a second one.

In addition, tissue differentiation, the formation of head, the various internal organs, skin and bones from look-alike embryonic tissue, appears to take place after the circulatory system is developed.

The current experiment, Miss Pavlovic said, may lead to similar transplants in mammals.

So far, she has not been able to find any difference in the behavior of chicks with transplanted heads and those with their own heads. Two chicks that lived for 70 and 55 days were both smaller than unoperated ones.

In the extremely delicate operation, a square opening is made in the egg shell. A pair of special watchmaker's forceps is used to cut through the middle of the embryonic mesencephalon or midbrain. The detached tissue is then removed with a suction pipette and placed on the prepared embryo of another chick that has been similarly "decapitated." The window in the shell is then covered and the egg placed in an incubator.

The region of the head that is transplanted includes the developing eyes and ears, the forebrain, half the midbrain, and the upper beak of the chicken.

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BLACK-HEADED RHODE ISLAND RED—This 21-day-old chick survived an operation in which it received a transplant of embryonic head tissue from a different breed of chicken. Mira Pavlovic, who performed the transplant, is observing the chick.

SCIENTIA INTERNATIONAL

NOVAS DEL MENSE IN INTERLINGUA

► **Ornithologia.**—Pollution oleose de pecias de aqua resulta annualmente in le morte de milles e decenas de milles de aves, specialmente marin. Tractar le victimas con sapon o altere detergentes non effectua lor rehabilitation, proque tal agentes remove etiam le oleos natural in lor plumage. Secundo un naturalista angese, le uso de argilla smectic (i.e. "fuller's earth," "Walkerde," "terre à foulon," etc.) solve le problema.

► **Obstetrica.**—Se trova sub disveloppamento al Universitate Yale un machina electrocardiographic que registra simultaneamente (1) per medio de electrodos applicate al abdomen de un femina pregnant le complexo del activitate del corde del matre e del activitate del corde del feto e (2) per medios plus conventional le activitate del corde del matre sol. Le machina "subtrahe" automaticamente le secunde ab le prime de ille duo registrationes e fornì assi un electrocardiogramma del corde fetal. Illo ha essite usate pro studiar cordes fetal a un etate de solamente 18 a 20 septimanas. On spera poter utilisar lo durante le periodo del labores pro deteger e remediar anomalías cardiac acute que menacia le vita o le sanitate del infante.

► **Aeronautica.**—Ha essite inventate un ballon a helium que se infla automaticamente quandoque le aeroplano in que illo es installate incurre un accidente major. Allora le ballon monta sed remane attachate al aeroplano per un corda. Illo es equipate con un radiodiffusor automatic que emite signales de alarma.

► **Alimentos.**—The a glacie se face tradicionalmente (e usque nunc necessariamente) ex le calide. Iste paradoxo resulta del facto que certe fracciones de the es insolubile in aqua frigide. Senior I. I. Herz de White Plains, New York, ha discoperite (e patentate) un processo que effectua le complete solubilitate de ille fracciones in aqua frigide. Le processo consiste in un pre-trattamento per un sulfito que es innocuo pro le organismo human.

► **Astronomia.**—Le distantias relative intra nostre systema solar—per exemplo Terra a Luna, Terra a Marte, Marte a Sol, Terra a Sol, etc.—es cognoscite con alte grados de exactitude. Tamen, le normalmente acceptate valores pro le distantias absolute es minus digne de confidentia. Recente observations per medio de radar, reportate per Dr. B. S. Yapplee del Statounitense Laboratorio pro Recercas Naval, indica que le distancia inter Terra e Luna es in realitate appreciabilmente superior a lo que ha currentemente essite supponite super le base de calculaciones astro-mathematic.

► **Chirurgia.**—In experimentos con canes, Dr. E. H. Kopf de Buffalo, New York, ha trovate que in reimpiaciar aortas defective, sectiones del trachea de un subjecto morte es plus satisfacente que sectiones del aorta de un tal subjecto o etiam que reimpiaciamientos artificial. Dr. Kopf es preste a essayar su methodo in pacientes human.

► **Zoologia.**—Le disproportionatemente grande glandulas nasal del aves marin esseva recognoscite per Dr. K. Schmidt-Nielsen, del Universitate Duke como organos de "desalification de aqua salin." In experimentos con pinguines il esseva trovate que dece minutus post le ingestion de 5 g de sal le glandulas nasal de ille aves comenciava producer un secretion plus concentratemente salin que aqua de mar. Le processo continuava plus que 11 horas e resultava in un descarga total de sal que esseva dece vices plus grande que le simultanee descarga de sal per le renes.

► **Neurologia.**—Le effecto anesthetic de lobotomia cerebral pote esser simulate sin extense intervention chirurgic per localisate injectiones intracranial de micre quantitates de aqua calide de un temperatura de 75 C. Le methodo, disveloppate per Dr. R. Jaeger del Collegio Medical Jefferson a Philadelphia, visa a disrumper specific connexiones neural inter le lobo frontal e altere partes del cerebro. Repetite injectiones pote esser usate pro ajustar le grado e le extension del disconnexiones al requirimentos del caso individual.

► **Dentisteria.**—Le observation que circa 1 pro cento del population es naturalmente immun contra carie dental ha inspirate un studio al Universitate Estatal de Ohio, visante a isolar e identificar le factor protectori in le saliva del fortunate individuos qui non cognosce le miseria de carie dental. Il pare tractar se de un proteina de structura ancora incognoscite, le qual ha le potentia de restringer o mesmo supprimer le flora buccal de lactobacillos.

► **Recercas de Poliomyelitis.**—Studies in 142 matres e lor neonate infantes, effectuate al Universitate Michigan, ha definitivamente demonstrate que le vaccination antipoliomyelitic de feminas pregnant establì le mesme grado de protection in le feto como in le matre.

► **Satellitologia.**—Le statounitense Consilio National de Aeronautica experimenta con le idea de utilisar ballones a superficie metallic como satellites con le function de servir como stations de relays pro le radiocommunication terrestre. On pensa a ballones de diametros de 30 m e plus. Un specimen experimental de un diametro de 4 m ha jam essite portate a un altor de circa 80 km. Iste specimen habeva un peso de circa 4 kg. Al altor desirade illo esseva inflate per aere comprime. In satellites de iste genere, le tension interne pote (e mesmo debe) esser relaxate si tosto que le forma spheric del ballon ha essite effectuate.

► **Ressources de Energia.**—Detonaciones serial de "micre" bombas de hydrogeno (i.e. de 10 kilotonnas de energia), effectuate a intervallos de un medie hora al interior de un specialmente construite camera gigante (i.e. de un altor del ordine de 150 m e un largor del ordine de 200 o 300 m), essera capacea producer satis vapor de aqua pro generar 12 pro cento del consumption total de electricitate del integre Statos Unite. Detals de iste projecto esseva elaborate per Dr. J. Orear del Universitate Columbia. Le parietes del camera visualisate per Dr. Orear essera representate in parte per le lateres de un canyon natural.

► **Industria de Suco.**—Un meliorate processo pro pulpar le fibras residue del canna de suco—i.e. del material que es tecnicamente cognoscite como "bagazo"—esseva disveloppate in le laboratorios del statounitense Departamento de Agricultura. Illo rende possibile le utilisation de bagazo in le fabrication de carton de imballage del plus alte qualitate.

► **Statistica Medical.**—Inter le 30 de junio 1957 e le 5 de april 1958, morbos supero-respiratori in le Statos Unite causava un total de 575.000.000 dies-patiente passate in lecto.

► **Cardiologia.**—Chirurgia cardiac a basse temperatura (i.e. chirurgia cardiac hypothermic) va possiblemente necessitar un complete re-evaluation del effectos de varie drogas que es tradicionalmente usate in operationes del corde. Le action e interaction de tal drogas cambia sub conditiones hypothermic—in certe casos usque al contrario de lor action sub conditiones normothermic.

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GENERAL SCIENCE

Reading Interlingua

► **YOU CAN READ** Interlingua if you had no more than one semester of high school French or Spanish or Latin and flunked it. You can read and understand a great deal of it even if you had never had contact with any foreign language.

Send this page to an acquaintance abroad and tell him that he can get additional information about Interlingua from Alexander Gode, SCIENCE SERVICE's Interlingua Division, 80 E. 11th St., New York 3, N. Y.

Financial contributions to the Interlingua program are needed and will bring dividends in the future by helping to establish this new international tool.

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ENTOMOLOGY

Fire Ants Set Blaze

The problem of controlling the current invasion of the imported fire ant, a pest that is disrupting farming activities throughout the South, is being studied intensively.

► THE FIRE ANT is setting conservationists, farmers and health officers ablaze.

These recent developments point up the fire ant problem that now involves nine southern states and more than 20,000,000 acres:

1. Conservationists charge that treatment of infested areas with the insecticide, heptachlor, is causing widespread death to wildlife and may very well endanger humans.

2. Fire ant bites are becoming a major health concern. The U. S. Public Health Service is planning to assign a biologist to the problem. At the same time, Tulane University scientists have undertaken a special study of the medical aspects of the fire ant.

3. The U. S. Fish and Wildlife Service is preparing a preliminary report on the effects of the insecticide war on wildlife populations.

The fire ant gained notoriety last year when the small pest with the big bite set the nation's legislators aflame. It is an undesirable alien from South America that jumped ship in Mobile, Ala., 28 years ago and has spread throughout the southlands since.

The fire ant is capable of killing small farm animals and making life generally miserable for farm workers and others. When it bites, it feeds irritating fluid into the wound that causes festering sores. Persons can also react more violently to the bite.

The problem is not only a rural one. In New Orleans, for example, there are an estimated 1,000 fire ant bite cases reported each summer day.

In November, 1957, the U. S. Department of Agriculture embarked on a control program. Since that time slightly more than 200,000 acres of infested land have been sprayed with either heptachlor or dieldrin, both of which have been effective in curbing the fire ant.

According to conservationists, however, heptachlor has also been effective in killing wildlife. Alabama conservationists report treated areas are literally rank with the stench of small game and birds dead from insecticide poisoning. They point out that humans who eat animals raised in areas where the insecticide has been used might also be endangered.

The conservationists are also worried about the residual effect of the insecticide sprays. They are concerned about the cumulative effect upon future wildlife populations.

The U. S. Fish and Wildlife Service is worried too. The Government conservationists have information on some cage tests, but little on field operations. They report they are aware of the threat to wild-

life and are currently working with USDA to resolve the problem.

Still to be determined, they note, is what effect insecticide treatment of infested lands will have on the reproductive rate of wildlife. Laboratory tests show that some insecticides will cut down reproduction or result in crippled animals.

The U. S. Public Health Service is interested because heptachlor and dieldrin are highly toxic to fish and aquatic life.

Farmers are up in arms about the fire ant because it causes damage to their crops and livestock. Farm machinery often becomes damaged when passing over fire ant mounds and farm workers rebel when it comes to working in infested fields where they run the risk of being bitten by the pesty little ant.

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AGRICULTURE

Rust-Resistant Wheats Created for 100 Years

► A RUST-RESISTANT WHEAT has been created by scientists at Brookhaven National Laboratory, Upton, N. Y.

The scientists have also outguessed rust diseases that could attack wheat for the next 100 years, Sen. Clinton P. Anderson (D-N. Mex.), vice-chairman of the Joint Committee on Atomic Energy, revealed during a speech at the National Press Club in Washington.

In answer to a question on how atomic energy has thus far affected agriculture, Sen. Anderson disclosed that Brookhaven atomic scientists have bred "wheat that will not rust at any time."

They have gone one step farther, he said, and perfected new varieties of possible future rusts and then created new rust-resistant seeds. In effect, the scientists have been able to outmaneuver future wheat diseases today.

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SURGERY

Doctors Plan Standards For Surgical Implants

► A LEGAL ORGANIZATION to establish mechanical and biological standards for the metal plates, screws, nails and pins used within the human body is being planned.

At the present time, there are no Federal or other standards regulating the quality of these surgical materials, Dr. Joseph S. Barr, orthopedic surgeon from the Massachusetts General Hospital in Boston, said.

The six leading manufacturers, although they have done their best, have not all

produced uniform materials that can withstand intense stress and still remain biologically harmless, he told a meeting of the Orthopedic Associations of the English-Speaking World.

More research on the qualifications of such surgical implants is needed, he said. Neither individual doctors nor manufacturers have the funds to carry on such a program, he pointed out.

The proposed organization is called the American Surgical Materials Association. It is sponsored by the American Medical Association, American Hospital Association, American College of Surgeons and the American Academy of Orthopedic Surgeons.

The charter for the organization is before the Justice Department, awaiting legal interpretation, Dr. Barr said.

Metal plates and similar devices have been used since 1917 or thereabouts. However, it was not until after World War II that replacements of whole hip joints was accomplished.

Stainless steel was introduced as a stable material for the latter purpose at that time. Nevertheless, doctors believe that ten years is too short a time to test the adequacy of stainless steel.

In addition, Dr. Barr said, none of the materials, including those used since 1917, has been tested for a satisfactory number of years. Therefore, to insure safety and uniformity of materials, the doctors expressed a desire for regulated controls of all materials used for surgical implants.

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SURGERY

Summer Tonsillectomies No Worse Than Others

► TONSILS can be removed any season of the year, even summer. Postponing the operation until the cooler months has not resulted in fewer cases of polio as was expected.

Reviewing the polio cases of the 1940's, when tonsillectomies were performed during the peak summer months, Dr. Max Unger points out the relatively low incidence of polio cases.

In the summer-tonsillectomy years between 1943 and 1949, 151,027 cases of polio were reported. During the years between 1950 and 1956 when summer tonsillectomies were not performed, there were 238,093 cases of polio, Dr. Unger reports in the *Eye, Ear, Nose and Throat Monthly* (April).

"Definitely, the cessation of tonsillectomies during the summer months did not reduce the number of polio cases," he declares. Thus, he urges that tonsillectomies be concentrated in the summer months.

A large and increasing pool of tonsillectomized children has been developing in the past two decades. The increase in polio cases that has occurred in the past 20 to 25 years may be directly related to this increase in tonsillectomized children.

Evidence indicates that tonsillectomies do not predispose children to the development of poliomyelitis, the doctor concludes.

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PSYCHOLOGY

Weigh Job Satisfaction

The many factors that make for "job satisfaction" need further study. Psychologists have been challenged to find a good way to measure job satisfaction.

► TENS OF THOUSANDS of dollars are being spent by industry and business on surveys of "job satisfaction" of employees but it is doubtful whether any ten experts would agree on a specific definition of "satisfaction."

There is no good way to measure it at present, but psychologists were challenged to solve this problem as they have solved the problem of measuring aptitudes and interests.

Dr. Edward K. Strong Jr. of Stanford University issued this challenge to colleagues in the Walter Van Dyke Bingham Memorial Lecture at the University of Minnesota. The lecture is one of a series established in 1954 on "Discovery of the Talented."

Satisfaction is defined as "fulfillment of a need or desire, a pleasant feeling or contentment, a relatively quiescent condition," thus emphasizing arrival at a goal, Dr. Strong said.

But satisfaction occurs not merely when the goal is reached but also long before. "Anticipation of one's date next Friday night is often much more exciting than the actuality."

It is not possible, Dr. Strong pointed out, to measure satisfaction or dissatisfaction with past events with any accuracy, and even if they could be measured, it would be of little value.

Suppose, for example, a violent argument arises in the machine shop over how

a job should be done. The man who wins feels satisfied, the other dissatisfied. If, then, the incident is forgotten the next day and there is no bad feeling on either side, then there is no existing satisfaction or dissatisfaction and no point in trying to measure it. If, however, the loser is still disgruntled, then this may have a bearing on his overall satisfaction-dissatisfaction.

In connection with satisfaction with a goal not yet attained, it is the difference between today's satisfactions and those expected in the future that is important rather than either, or both, in themselves.

A man's satisfaction depends not only on what he wants and whether he has it now, but also on his idea of his chances of getting it in the future.

With many goals, there is a cycle from dissatisfaction to satisfaction, repeated over and over. A man may be dissatisfied with his salary, have anticipated satisfaction when the grapevine reports there will be raises, satisfaction when the increase is received, then little thought on the subject, gradually changing again to dissatisfaction.

The Bingham Lecture series honors the late Dr. Walter Van Dyke Bingham, a psychologist who pioneered in the recognition and measurement of various kinds of talent, particularly in the scientific and technical fields. It was established by Dr. Bingham's widow, Millicent Todd Bingham.

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PUBLIC HEALTH

Asian Flu Here in 1889

► A WAVE of Asian influenza swept the United States almost 70 years ago.

This finding might result in an all-purpose vaccine that will eliminate future epidemics of the disease, Dr. Fred M. Davenport of the University of Michigan Medical Center, Ann Arbor, Mich., told the Federation of American Societies for Experimental Biology meeting in Philadelphia.

According to Dr. Davenport, the number of influenza viruses that attack man is not infinite, but limited to four families in number. They fall under Class A and are:

1. Swine-like influenza virus prevalent during the epidemic of 1918.
2. Type A, found during 1925-1943.
3. Type A Prime prevalent from 1947-1957.
4. Asian influenza now attacking man.

Anyone who had suffered an attack of influenza caused by any virus of the four families would have identifiable antibodies in their blood streams. Tests of 80-year-old patients at the University of Michigan Hospital made last fall showed Asian influenza antibodies were present.

Finding the Asian influenza antibodies in these elderly patients has led Dr. Davenport to conclude that they suffered the influenza attack during an outbreak in 1889-1890. Further, it is evidence that a complete cycle has occurred.

Similar reports of Asian influenza antibodies in older persons attributable to an 1889-1890 epidemic have been made by scientists in The Netherlands and India.

If the cycle theory of influenza is valid, scientists may be able to perfect a multiple vaccine effective against all four families and "effective at all times."

Science News Letter, May 31, 1958

PSYCHOLOGY

Find Out What Tattooed Man Is Really Like

► A MAN'S DECISION to be tattooed has nothing to do with whether or not he is a sailor, his educational level, or his being drunk at the time.

This was learned when a team of doctors

at the University of Oklahoma School of Medicine, Oklahoma City, attempted to find out what the tattooed man is really like. They wanted to know whether the average doctor's picture of him as an ex-sailor who was tattooed while drunk, or the virile character played up in cigarette advertisements is nearer to the truth.

After individual interviews of 138 men at the Oklahoma City Veterans' Administration Hospital, of whom 65 had one or more tattoos, the doctors decided that the usual idea of the tattooed man is not necessarily borne out by the facts.

However, the tattooed man does differ from other men in a number of ways. He is more likely to have been divorced and the son of divorced parents. He is more of a rebel, has more trouble with authority, is more likely to have been in jail. Tests indicate that he has a greater tendency to have a psychopathic personality and scores as more masculine.

The tattooed man is no more likely to be on the psychiatric ward than elsewhere in the hospital.

Drs. Joe Yamamoto, William Seeman and Boyd K. Lester, all of the Oklahoma School of Medicine, made the study.

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BIOCHEMISTRY

Cell Nucleus May Control Synthesis of Protein

► THE NUCLEUS of living cells may indirectly control protein synthesis, research at the University of California at Los Angeles has suggested.

Studies by Dr. David Prescott support the hypothesis: the nucleus may impart genetic information on protein synthesis to the cell cytoplasm, where the synthesis occurs, through a molecular messenger—RNA or ribonucleic acid.

When the nucleus is removed from the cell, the cell may live for some time. But it stops growing, presumably because protein synthesis is stopped in the absence of RNA from the nucleus, Dr. Prescott said.

The UCLA investigator said there was some RNA synthesized in the enucleated cell. But it is a different type of RNA, apparently only an energy source stored in the cytoplasm and probably not specifically involved in protein synthesis.

Such basic information is important in an understanding of how the normal cell works, he pointed out.

"Until we can define the processes of normal cell growth, we cannot hope to understand abnormal growth such as that manifested in cancer."

The RNA role in protein synthesis was traced by means of radioactive building blocks of RNA.

Amoebae were placed on slides and covered with sensitive film. Radioactivity, which becomes incorporated in the RNA, exposed the film, in effect producing X-ray-like photos, or autoradiographs, of the cell nucleus initially and later of the "hot" RNA which the nucleus had sent to the cytoplasm.

Science News Letter, May 31, 1958

ROCKETS AND MISSILES

Student Rocket Facility

► THE FIRST AMATEUR ROCKET static firing stand to be built under an Army engineer officer's nation-wide student rocketry safety program will be erected near Washington.

The safety facility, designed to spot unsafe rockets before they are launched in the open, will be constructed with public funds by high school students of Fairfax County, Va., Neal Shedd, county schools supervisor of science, told *SCIENCE SERVICE*.

The suburban Washington test stand is the first of many expected to be built throughout the nation during the coming year under a plan sponsored by Lt. Col. Charles M. Parkin, Jr., Army Corps of Engineers, Ft. Belvoir, Va.

Plans and specifications for the steel and concrete static firing stands were drawn up and tested by the veteran engineer officer. He has recently been waging an intensive off-duty campaign for a national student rocketry program that will "allow high school students to pursue their interests in the field, but at the same time will protect them and the general public from the possible dangers of indiscriminate rocket firings."

The crux of Col. Parkin's program, being

tried in the Metropolitan Washington area on a pilot basis by the national capital section of the American Rocket Society, is the steel and concrete bunker in which a student rocket is fired while fastened firmly in place.

Measuring devices within the firing chamber record valuable data for the students "even in the case of those rockets that explode, although the primary purpose is to weed out the dangerous rockets before they can be launched into the air from supervised, approved launching sites," Col. Parkin said.

Fairfax County school administrators expect the safety stand to cost about \$1,200, with high school students to be paid for labor and reserve Army Engineer Corps personnel residing in the area "probably to be paid for technical consultation," Mr. Shedd said.

"The facility has been requested repeatedly by our science teachers," he added.

The plans and specifications, which already are in the hands of education and civic groups in many communities, are available at no charge from Lt. Col. Parkin, G-3 Section, Ft. Belvoir, Va.

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ASTRONOMY

Moon Changes Color

► THE MOON changes color as it moves across the sky. It is greener at lunar sunrise than at sunset, and greener when it is at young crescent phase than when it is full.

The moon would appear much more colorful than it does if it could be seen without the interference of the earth's dancing atmosphere.

The colors are probably due to the intrinsic coloring of the rocks or surface deposits, not vegetation.

These are the conclusions of V. Axel Firsoff of the British Astronomical Association, made after studying several hundred observations of the moon through special filters that allow only one narrow band of light to reach the eye.

These filters, called monochromatic, also reveal slight differences of hue and allow the observer to make distinctions between seemingly identical whites, grays or blacks. The white of snow, for instance, Mr. Firsoff reports in *Sky and Telescope* (May), is not exactly the same as that of quartz or magnesite.

Lunar colorings are generally faint, but they can be seen by careful observers. One of the most definitely colored areas is a diamond-shaped stretch northeast of Aristarchus, one of the brightest of the lunar craters, in the northeast section.

This is how Mr. Firsoff said the moon would look when viewed through filters of different colors:

In red, the maria, or seas, are dark and

the general picture of mountains and valleys is clear at the terminator, the line between the dark and light portions of the moon.

With a yellow filter, the seas are generally paler and the contrasts of light and shade are not as noticeable.

A green filter brings out all the bright features, especially the rays from Tycho, the crater near the moon's south pole from which radiates the longest and most conspicuous ray system.

In blue light, the terminator's features are dull, some of its highlights being barely distinguishable.

In violet light, the whole picture is quite dull, details on terminator being visible only when the moon is very high in a clear sky. Some of the regions bright in blue light appear slightly hazy, as though seen through a luminous veil.

Science News Letter, May 31, 1958

SURGERY

Save Sliced Finger; Have it Sewed Back

► A FINGER TIP accidentally cut off can be successfully sewn back to the digit if the victim seeks immediate surgical help.

Accident victims can be spared the necessity of further skin grafting operations and of going through life with a shortened finger, Dr. Beverly Douglas of the plastic surgery division, department of surgery,

Vanderbilt University, reported. He spoke at the American Association of Plastic Surgeons meeting in Dallas.

However, the victim must remember to keep the amputated part of the finger. Dr. Douglas suggested wrapping it in tissue before heading for the hospital.

Seventeen such cases have been reported, all successful, partially because of the prompt action of the amputees. The severed tissue must be re-sewn as soon as possible to insure success, Dr. Douglas said.

Bleeding, in such accidents as these, should be controlled by tourniquet only, Dr. Douglas reported. Corrosives like iodine should not be placed on the open wound. Careful handling of the delicate tissue and extremely accurate sewing of the parts are essential. Dr. Douglas reported that he used magnifying glasses to match up fingerprint lines and small notches of the finger.

Dr. Douglas said that extremely accurate alignment of the amputated portion of the finger allows quick renewal of the blood supply. The finger, he added, is an area of terminal circulation. Fresh oxygenated blood need travel only a small distance in the finger to supply tissue needs.

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MAN-MADE CACTUS—Spot lights and a hot air blower melt the paraffin mold from a model of a cactus that became part of the three-dimensional giant cactus forest exhibit in The American Museum of Natural History's new Hall of North American Forests.

MEDICINE

Anti-TB Drug Reported Similar to Streptomycin

➤ A NEW AND promising anti-tuberculosis drug has been introduced.

Called kanamycin, it has been found to exhibit many of the properties of another tuberculosis fighter, streptomycin. Of 12 patients who received kanamycin, two were reported definitely improved. Exactly what role the drug played in the improvement has not been determined.

The remaining ten patients exhibited signs of favorable alteration of disease symptoms, Dr. Kenneth Wright of the Onondaga Sanatorium, Syracuse, N. Y., reported.

However, 50% of the patients became resistant to the drug within 60 days. The remainder became resistant within 120 days.

The resistance was about the same as that observed with streptomycin when this drug, the first effective tuberculosis fighter, was used alone, he said.

Streptomycin is now used with isoniazid or PAS, para-amino-salicylic acid. Future studies of kanamycin, in combination with other drugs, may yield better results, Dr. Wright told SCIENCE SERVICE. The 12 patients who were tested with kanamycin received that drug alone.

Kanamycin was first discovered in Japan in 1957 by Dr. Hamao Umezawa of Tokyo University. It is made from a mold related to that from which streptomycin and another antibiotic, neomycin, are derived.

Dr. Wright delivered his report at the 54th annual meeting of the National Tuberculosis Association in Philadelphia.

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VETERINARY MEDICINE

"Pigloo" System Helps Save Young Pigs

➤ IGLOO-LIKE homes for pigs can greatly reduce disease and death loss—some 23% of all pigs born in this country die before weaning.

Developed by Clarence Whitworth and James S. Collins of Nutrena Mills, Inc., each eight-foot-diameter wooden house, complete with exercise pen, is actually an individual maternity ward for the mother pig and her offspring.

The house is designed so that the sow cannot crush the infant pigs when they nurse. Since "non-family" pigs are not kept in the same building, the usual livestock diseases that afflict young pigs are virtually eliminated. The sow also builds up antibodies that are passed on to her litter.

The "pigloo" is part of a unique housing and management system that takes advantage of known principles of antibody protection, natural birth and physical protection of the young pigs. Tested with on-the-farm production of 5,000 animals at various test sites, the pigloos are credited with reducing disease loss from more than 10% to almost zero and cutting death loss from crushing of infant pigs from 14% to less than 2%.

Initial construction cost of housing is also reduced greatly. A farmer's labor require-

ment for producing 900 pigs a year is cut in half. In addition, the system permits planned breeding so that the farmer can increase the yearly number of litters produced by each sow.

The pigloo system is expected to "bring economic advantages so striking as to result in a complete revamping of the nation's hog producing industry," James C. North, president of Nutrena, said. It is described as a low-cost system in which the independent hog raiser can produce the lean-meat type hog now in demand for year-round marketing.

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MEDICINE

Test Diagnoses Diabetes Within Half Hour

➤ A NEW DIAGNOSTIC test for mild cases of diabetes has been developed.

The test, a timesaver, consists of injecting sodium tolbutamide into the patient's vein. The response of the blood sugar level can be analyzed 20 to 30 minutes later, the Veterans Administration reported.

Non-diabetics show a rapid decline in blood sugar level whereas the level in diabetics falls much more slowly. The curves of the readings of blood sugar level after the injection made possible a diagnosis of diabetes with an accuracy of about 95%.

The principle of the test is based upon the presumed ability of sodium tolbutamide to stimulate the insulin-producing cells of the pancreas to release more insulin, thereby lowering the blood sugar level. This was reported by Drs. Roger H. Unger and Leonard L. Madison of internal medicine of the University of Texas Southwestern Medical School and the Dallas VA hospital.

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PSYCHIATRY

Doctor Should Babble With Babbling Child

➤ A DOCTOR should babble with a psychotic babbling child, Drs. Robert C. Prall and I. Hyman Weiland of the Eastern Pennsylvania Psychiatric Institute, Philadelphia, told the American Psychiatric Association meeting in San Francisco.

This procedure was recommended as a method of making contact with the inaccessible child who cannot talk meaningfully and seems frightened and completely withdrawn. The doctors described their work with 15 boys and five girls who either had no use of speech or who used words in a meaningless and babbling way.

The first step in making contact with such children, they found, was to join with them in their babbling. Next it is necessary to give them support by protecting them from their overwhelming impulses and by reassuring them of the permanence of objects.

Next an attempt should be made to help the child to distinguish between what is real and what is a part of his personal dream world.

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IN SCIENCE

PUBLIC SAFETY

U. S. Policy on Halting Bomb Tests Is Changing

➤ THE UNITED STATES policy on testing hydrogen bombs is due for a change.

The change, which will be an outright halt, is expected in early summer when the current series of nuclear tests in the Pacific is concluded. Russia has already stopped nuclear weapons tests with the qualification that the halt would hinge on U. S. and British actions.

Although the U. S. policy reversal will come too late to carry the world-wide propaganda advantage it could have had, it will, nevertheless, be a step in easing international tensions. It will also help to curb the fears of many persons of all nationalities who are concerned that hydrogen bomb tests are so poisoning the earth's atmosphere that future generations will carry the burden of unfavorable genetic effects caused by the increased radioactivity.

The policy reversal will have these same effects, although perhaps to a lesser degree, if the U. S. nuclear test cessation is contingent upon stopping of tests by all other nations.

It is expected, however, that the U. S. will not qualify its suspension of hydrogen bomb tests, but that the decision will be a unilateral one.

Such an announcement might pave the way for reopening negotiations with Russia leading towards an end to the Cold War and the armaments race, with an adequate inspection system for policing the agreements when this is necessary.

Cessation of hydrogen tests, when this is finally accomplished by international agreement and with adequate inspection control, will bring one benefit not often considered: some tests can be conducted in a cooperative effort to explore possible peacetime uses of fusion bombs.

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NUTRITION

Spinach Contains Less Iron Than Carrots

➤ SPINACH has long been overrated as a source of iron.

Potatoes, squash and carrots contain more iron per portion than does spinach, Dr. William Bolton, associate editor of *Today's Health*, a publication of the American Medical Association, reports in the May issue.

Some years ago, spinach received an exaggerated rating as an essential food. The pendulum of time has now swung the other way, he states.

However, good aspects of the vegetable include the fact that it is a good "filling food" with a low calorie content, and it contains a moderate amount of vitamin A, as do most green vegetables.

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CE FIELDS

PUBLIC SAFETY

Radium Dial Watch Can Use Up Radiation Limit

► SOME LUMINOUS dial wrist watches contain enough radium to subject their owners to nearly two-thirds the maximum permissible level for exposure to hands and forearms.

This is the warning of Dr. J. L. Haybittle of the Radiotherapeutic Centre at Addenbrooke's Hospital, Cambridge, England, in *Nature* (May 17).

Dr. Haybittle borrowed some luminous dial watches from friends and tested them for radiation. They ranged in radium content from 0.01 to 2.2 microcuries.

The 2.2 microcuries of radium watch recorded a dose-rate of eight milliroentgens per hour. Assuming the watch is worn for 16 hours a day, Dr. Haybittle says, the skin would receive nearly two-thirds the permissible level.

"Should such watches," he warns, "become more popular with the public, then luminous watches would be second only to diagnostic radiology in the amount of radiation they contribute to the gonads."

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MEDICINE

New Type Lung Disease Plugs Air Passageway

► A NEW DISEASE of the lung has been reported by a group of pathologists.

The disease, called "alveolar proteinosis," is characterized by a stoppage of the air sacs when a protein-like material rich in fats plugs the air cells of the lungs. This was reported to the National Tuberculosis Association meeting in Philadelphia by Dr. Samuel H. Rosen of the Veterans Administration, Armed Forces Institute of Pathology, Washington, D. C.

Twenty-seven cases of the disease have been reported. The first case was observed at Massachusetts General Hospital five years ago. The majority of the cases have been seen within the past three years, most of them very recently, Dr. Rosen added.

At the onset of illness, some of the patients exhibited the symptoms associated with pneumonia. The most common complaint of the patient is shortness of breath and usually coughing.

No microorganisms have been found to be the cause of the disease. Treatment with antibiotics or corticosteroids does not appear to alter the course of the disease and, since the disease spreads through both lungs, surgery is not possible, Dr. Rosen pointed out.

The investigators are speculating that the disease is due to the inhalation of a foreign particle. The only clue to support this theory is the fact that four of the patients worked in lumber yards, while two were electricians.

Most of the patients are young adults, 20 to 40 years old. One is a child of two and one-half years. There have been eight deaths among the 27 known victims.

Other investigators of this new disease include: Drs. Benjamin Castleman and Richard Thomas N. Hunt, both of Massachusetts General Hospital, Averill A. Liebow of Yale University Medical School, and Frank M. Enzinger, also of the Armed Forces Institute.

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NUTRITION

Odorless and Tasteless Flour Made From Fish

► FISH FLOUR BREAD is being offered by South African bakers.

The flour is reported to be completely odorless and tasteless by the U.S. Department of the Interior's Bureau of Commercial Fisheries. In areas where protein foods are scarce or expensive, the process may offer a fairly simple way of adding protein to the diet.

The raw material for the flour is prepared by an extraction process from crude fish meal. Five or more extractions are made with a solvent mixture consisting of 90% industrial ethyl alcohol (96% strength) and 10% ethyl acetate. Each extraction is followed by a wash in clean solvent. Drying in hot air or by vacuum frees the flour from all traces of solvent.

The final flour has a light brown color and all the "biological value" of the protein is unaffected by the process.

South African fishermen bring in a total catch of some 500,000,000 pounds of fish in a good year. It is estimated that 10,000,000 pounds of fish flour a year will be required to supply demand. A two-pound loaf of the new bread contains about two percent fish flour.

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ENTOMOLOGY

Device Shows Sky As Seen by Insect

► A DEVICE to show the sky as seen through an insect's eye has been built by two Canadian scientists.

It reproduces the pattern of polarized light from a blue sky, they report in *Nature* (May 17). Thus the instrument enables the human eye to detect aspects of light perceived by insects.

Dr. J. A. Chapman of the Forest Biology Laboratory, Victoria, B. C., Canada, devised the viewer with which the sky is observed through a rotating Polaroid-covered slit.

The device is expected to be a valuable aid to entomologists studying insect behavior in determining how the environment appears to the insect's sense organs. Only recently did scientists learn that the eyes of arthropods are sensitive to changes in the polarization of light, and that many insects use the plane of light polarization from a blue sky for orienting themselves.

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BIOCHEMISTRY

Chemical Found Only In Malignant Tissues

► A CHEMICAL existing only in cancerous tissue has been discovered.

Finding a compound exclusively in malignant tumors and never in normal tissues will greatly contribute to the diagnosis of malignant tumors. Equally important, it should lead to uncovering the secrets of cancerous growth and the discovery of a way to control cancer.

The chemical, malignolipin, is a phospholipid, a fatty substance that contains phosphorus. Malignolipin is never found in the normal tissues, such as cattle brain or whole bodies of normal mice, five Japanese scientists report in *Science* (May 16).

Malignolipin was discovered during an investigation of the chemical nature of the extracellular small bodies in cancer tissues that were constantly attracted to protoporphyrin III, a component of protoplasm. The chemical is composed of choline, spermine, phosphoric acid and fatty acid.

It is abundant in highly malignant tumors and in the rapidly growing part of a tumor. It is scarce in dying tumors or in the degrading parts of tumors.

The researchers are Drs. Takekazu Kosaki, Tadao Ikeda, Yoshimaro Kotani, Shinya Nakagawa, and Toshiko Saka, all of Mie Prefectural University, School of Medicine, department of biochemistry, in Tsu City, Mie, Japan.

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NUTRITION

Find No Evidence for Changing Fat Intake

► NO CONCLUSIVE EVIDENCE has been found that the fat consumption of the average American should be curbed, according to a report by the National Academy of Sciences.

A great deal more definitive research into the nutritional role of fats and their possible connection with cardiovascular illness is necessary before any major American dietary changes can be recommended, the National Academy of Sciences-National Research Council reports.

Population studies indicate that diets high in fat are correlated with higher levels of plasma cholesterol and with increased cardiovascular disease. However, decisive proof of the causal relationship is lacking because of the many variables entering into the data, according to the report.

Until it is clearer which fats are more desirable nutritionally and which, if any, are undesirable, major changes in the American diet are not recommended.

The report, entitled "The Role of Dietary Fat in Human Health," was prepared by the Committee on Fats in Human Nutrition of the Academy-Research Council's Food and Nutrition Board. Chairman of the committee is Dr. Paul L. Day, professor of biochemistry at the University of Arkansas. Dr. Willis A. Gortner, biochemist for the Department of Agriculture, assisted.

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PUBLIC HEALTH

A Decade of "Good War"

The World Health Organization celebrates its tenth anniversary this year. The World Health Assembly is being held in the United States for the first time.

By HOWARD SIMONS

► A WORLD WAR has been raging for the last ten years that refutes Benjamin Franklin's oft-quoted quip, "There never was a good war or a bad peace." Ironically, this war is a good one and if it were stopped, countless thousands would die.

The war is against disease. It is being waged by the World Health Organization which is known popularly everywhere by its wonderful acronym WHO.

This year marks the tenth anniversary of this unique international health organization. On May 26, the World Health Assembly, WHO's policy-making body, opened its annual meeting in Minneapolis, Minn. This marks the first time the Assembly has gathered in the United States.

On May 26 and 27, the Assembly met in special session to commemorate its first decade of service to mankind. From May 28 through June 14, delegates and technical advisers from the 88 nations that support WHO are rolling up their sleeves to tackle the problems of policy, direction and finances for the second decade.

United Nations' Creation

WHO is a specialized agency created by the United Nations but has its own independent membership, its own governing body and its own budget.

Historically, the UN summoned an International Health Conference in New York City in 1946. There WHO's Constitution was signed by 61 countries. By 1948, enough nations had ratified their membership to allow the organization as it is known today to come into official being as a specialized agency of the UN.

Briefly, WHO has done, and is continuing to do, the following:

1. Assist 120 countries and territories throughout the world to fight disease, train health workers and strengthen national health services.
2. Operate a watchdog service that gives immediate warning of any outbreak of pestilential disease.
3. Bring all countries of the world the latest information on new methods of fighting disease and building health.
4. Set up universal health regulations for travel and trade, and recommend international standards for drugs and vaccines.

The cost during the current year of 1958 for all these activities will be \$13,500,000—one-half cent for each human being on earth.

Statistically, WHO's record is an impressive one to say the least. With numbers, charts and maps WHO workers can point

out that they now have malaria, tuberculosis, venereal diseases and yaws on the run. They can also show how they are waging a relentless battle against 40 other world-wide illnesses from leprosy and rabies to plague and yellow fever.

Statistics, however, cannot tell all of WHO's story. Facts and figures can never quite tell exactly how this global battle has meant relief of human suffering from almost antiseptic American streets to jungle-stifling villages in Africa.

Statistics cannot convey what it means for a youngster who was once doomed to disease to realize that now he or she might live to marry. Statistics will not describe the feeling of a mother who once knew that death stalked each of her newborn, but who can now look forward to grandchildren.

Ten years is not a very long time when measured against the eons of a disease-ravaged mankind, but progress in these same ten years to make the world disease-free far outweighs the calendar and the clock.

There is a quiet optimism voiced by the tireless WHO workers that some day the dream of a future without infectious disease will not be too far off. But with the optimism, there is always caution — soft warning that the world faces new problems



WORLD HEALTH—This youngster now has a healthy chance of escaping both the flies on his face and the breeding ground for disease at his feet, thanks to the sanitation work of his country and the World Health Organization, which is celebrating its tenth anniversary of war against disease this year.

and that the mass control of infectious disease does not solve all health problems nor end disease.

"The ten years just past," says Dr. H. van Zile Hyde, chief of the U. S. Public Health Service's international health division, "have demonstrated that man now has at his command the knowledge and the will to eliminate infectious disease from the world. The accomplishment thus far is great; the promise greater."

Forgotten Terrors

Dr. Hyde goes on to point out that in some areas of the world the public has fully forgotten the terrors of cholera, plague, smallpox and yellow fever, thanks to man's concerted effort to stamp out these infectious diseases. Parents, he adds, no longer fear measles, diphtheria, scarlet fever and whooping cough. Malaria has been eradicated, tuberculosis is fast disappearing, and very recently there has been major advance against poliomyelitis.

However, Dr. Hyde warns, "as the control of infectious disease advances, other problems and diseases take on new importance."

One that Dr. Hyde cites as an example he terms the "chemical miasma." Humans throughout the world, he explains, use millions of pounds of chemicals on their food-stuffs, take millions of pounds more as pills and capsules, and expel more millions still as gases into the atmosphere.

How dangerous is this chemical miasma? No one really knows yet but, Dr. Hyde says, the facts that are known "indicate something of the problem in the chemical sphere that emerges as infectious disease recedes."

"Since ancient times, and all the world over, people have dreamed of a paradise on earth, cattle and green pastures, and the promise of a peaceful, long and happy life."

Science: Instrument for Survival

This is mankind's dream that is coming true, in the opinion of another WHO worker, Dr. Axel Hojer, formerly director-general of the Swedish Medical Board, and currently professor of social and preventive medicine at Assam Medical College, India.

"Man, like the animals, has instincts and habits which keep him strong and healthy, or at least alive, until he has produced offspring," Dr. Hojer says.

"But in the last hundred years, and especially during the last ten years, man has forged a new and better instrument for survival, called science."

"Scientific experiment has deepened our knowledge and our understanding and even failures and mistakes have taught their lessons."

"Better knowledge has brought better health. Life is becoming longer and healthier in place after place, and man seems to have found out how to make his dream of a paradise on earth come true."

However, Dr. Hojer also cautions, "the realization of this aim is not easy. In every country the same problems present themselves in different ways. As one disease is

eradicated, one problem solved, others grow in importance. A longer life brings with it special problems connected with old age."

"The lesson of the last ten years of health progress is nevertheless clear. Health for all is no longer an unattainable ideal, but an everyday reality well within man's grasp."

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ENTOMOLOGY

Thirty Years' War Against Buffalo Fly

➤ A SILENT war has been fought in Australia's Northern Territory for more than 30 years against a tiny insect, about half the size of a common house fly and known as the buffalo fly. It invaded the northern part of Australia about 110 years ago.

The fly arrived with buffaloes imported from Indonesia when the first British military establishments were set up on the coast of northern Australia. The fly soon became firmly entrenched, and has developed into the worst cattle pest ever known in Australia.

The fly is not a disease carrier like the tick, and its bites do not kill, but it is a blood sucker. It worries livestock until they are valueless.

Maddened by the bites, the animals rub themselves against trees, rocks, wire fences and other obstructions until they are a mass of sores. As many as 5,000 flies have been found on one beast.

The insects feed on their animal hosts for about ten days. Their eggs hatch in warm weather within 20 hours and then more insects start feeding on the animal.

For years scientists have been trying to control the fly. They have been successful in some parts of North Australia, but the fly has spread to other areas, particularly West Australia.

A few years ago, a special wasp was introduced and mated with a local wasp, the resulting hybrid being released in the hope that it might attack the fly. The wasp did not attack the fly, so scientists are now looking around for another insect with which to fight the buffalo fly.

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PEDIATRICS

Caustic Cleansers Cause Most Infant Gullet Burns

➤ CAUSTIC CLEANSERS are the most frequent cause of chemical burns of the esophagus or gullet in children six years of age and under.

Such common household items as ammonia, bleaching solutions and battery or soldering acids also frequently cause accidental chemical burns of the esophagus, Drs. Kenneth C. Johnston and Paul H. Holinger of the University of Illinois College of Medicine, told the Illinois State Medical Society meeting in Chicago.

Sometimes a solution of the caustic, either sodium or potassium hydroxide, is mixed in a pop bottle, glass or cup normally used for drinking. This mixture is left within a

youngster's reach. Sometimes, they said, a child consumes carelessly placed powders or crystals.

Occasionally, a mother gives her baby a teaspoon of lysol or pure lactic acid from a bottle she mistook for cough medicine or cod liver oil.

The surgeons stressed the importance of early treatment and the continuation of therapy for several weeks even when there is no apparent sign of a burn.

If a caustic has possibly been swallowed, it is wiser to assume that burns have occurred in the esophagus and to start treatment immediately, the surgeons suggested. If treatment is delayed, the esophagus may become abnormally narrow due to excessive overgrowth of the surrounding tissue, they said.

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RADIO

Saturday, June 7, 1958, 1:30-1:45 p.m., EDT
"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio network. Check your local CBS station.

Dr. Francis Marott Sinex, professor and chairman of the department of chemistry, Boston University School of Medicine, Boston, Mass., will discuss "Aging and Cardio-Vascular Disease."

PSYCHIATRY

Place of Tranquilizers Still to Be Determined

➤ THE PROPER place for tranquilizers in treating the mentally ill is not clear, Dr. Lothar B. Kalinowsky of the New York State Psychiatric Institute, New York, reported at the American Psychiatric Association meeting in San Francisco.

Dr. Kalinowsky came to the Institute from Rome in 1940 to introduce the then new electroshock treatment that is still in wide use.

He said there is confusion over what is meant by "tranquilizers." The phenothiazines and Rauwolfia drugs are called tranquilizers, but so also are the meprobamates. These include Miltown and Equanil, which are really more like the older drugs called sedatives, as shown by the occurrence of withdrawal psychoses resembling those after the sudden withdrawal of barbiturates.

Such withdrawal symptoms do not follow the cessation of the phenothiazines. In fact, the phenothiazines can be used to counteract such withdrawal symptoms from other drugs.

Adding to the confusion is the fact that appraisal of tranquilizers in large institutions differs radically from the opinions of psychiatrists who have used the drugs for the type of patients seen in private practice.

The phenothiazines and Rauwolfia drugs are extremely useful for the control of excitement in psychotic patients, Dr. Kalinowsky concluded. However, if they are given to anxiety ridden neurotics, the anxiety is often aggravated.

Science News Letter, May 31, 1958

Books of the Week

For the editorial information of our readers, books received for review since last week's issue are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N Street, N.W., Washington 6, D. C. Request free publications direct from publisher, not from Science Service.

ALKALI-AGGREGATE REACTION—R. C. Mielenz, E. J. Benton and others—*Highway Research Board, Bulletin 171*, 36 p., illus., paper, 80¢.

BIBLIOGRAPHIC SURVEY OF CORROSION 1954-1955: A Compilation of Corrosion Abstracts—A. Irene Humphrey, compiler—*Nat. Assn. of Corrosion Engineers*, 468 p., \$20.

CARE OF THE PREMATURE INFANT—Evelyn C. Lundeen and Ralph H. Kunstadter—*Lippincott*, 367 p., illus., \$8. Telling the nurse and mother about the care of these human miniatures in the hospital and at home.

CAREERS IN THE NUCLEAR FIELD: Areas of Specialization, Training, Scholarships, Fellowships, Opportunities, Where Employment Is Found—Juvenal L. Angel—*World Trade*, 26 p., paper, \$1. To help the student in planning his career.

CHEMICALS, HUMUS, AND THE SOIL: A Simple Presentation of Contemporary Knowledge and Opinions About Fertilizers, Manures, and Soil Fertility—Donald P. Hopkins—*Chemical Pub. Co.*, rev. ed., 288 p., illus., \$8.50. A book for the "ordinary man who is interested one way or another in the care of the soil."

CURRENT STUDIES IN PSYCHOLOGY—F. J. McGuigan and Allen D. Calvin—*Appleton*, 226 p., illus., paper, \$2.65. To familiarize the beginning student with current trends in psychological research.

THE DEEP SEA—Marie Neurath—*Sterling*, 36 p., illus., \$2. A book for children about the beautiful or fearful creatures that live in the depths of the sea.

DIRECTED STUDIES IN INTRODUCTORY COLLEGE GEOGRAPHY—George T. Renner and Hugh C. Books—*Appleton*, 167 p., illus., paper, \$2.36. Exercises to accompany White and Renner "College Geography" or "Essentials of College Geography" by White, Renner and Novak.

THE DIRECTION OF RESEARCH ESTABLISHMENTS—E. S. Hiscocks and others—*Philosophical Lib.*, illus., \$12. Proceedings of a symposium held at the National Physical Laboratory Sept. 26-28, 1956.

DOCTORS TO THE WORLD—Murray Morgan—*Viking*, 271 p., illus., \$5. The exciting story of the world-wide battle against such pests as leprosy, malaria, yellow fever, kwashiorkor and yaws.

EIGENFUNCTION EXPANSIONS ASSOCIATED WITH SECOND-ORDER DIFFERENTIAL EQUATIONS: Part II—E. C. Titchmarsh—*Oxford Univ. Press*, 404 p., \$11.20. Presenting a theory for partial differential equations of the second order.

ELECTRICITY AND MAGNETISM—J. Myron Atkin and R. Will Burnett—*Rinehart*, 58 p., illus., paper, \$1. Experiments for elementary school children.

ELEMENTAL: PARTICLE ACCELERATORS—V. I. Veksler and others—*Atomic Press, Moscow (Consultants Bureau)*, Supplement No. 4 of the Soviet Journal of Atomic Energy, in English translation, 67 p., illus., paper, \$15. Papers from a conference on the physics of high-energy particles.

ESSENTIALS OF COLLEGE GEOGRAPHY—C. Langdon White, George T. Renner and Robert T. Novak—*Appleton*, 580 p., illus., \$6. A condensation of White and Renner's "College Geography," a college text.

THE EXCAVATION AT HERODIAN JERICHO, 1951—James B. Pritchard with Sherman E. Johnson and George C. Miles—*Am. Schools of Oriental Research*, 58 p., 65 pl., \$7.50. Describing the 1951 finds and their interpretation.

GREAT BLUE HERON: Behavior at the Nest—W. Powell Cottrille and Betty Darling Cottrille—*Univ. of Mich. Museum of Zoology*, 15 p., illus., paper, 35¢. Describing the nest building, courtship and care of the young by these interesting birds.

THE GREAT EB: The Story of the Encyclopaedia Britannica—Herman Kogan—*Univ. of Chicago Press*, 339 p., illus., \$4.95. The history of an important publication from the first edition of 1768-71.

HOW TO TAKE EXAMINATIONS IN COLLEGE—J. N. Hook—*Barnes & Noble, College Outline Series*, 180 p., paper, \$1.25. Practical information on how to prepare for and work with the various types of examinations given in college.

INFORMATION RESOURCES: A Challenge to American Science and Industry—Jesse H. Shera, Allen Kent and James W. Perry—*Western Reserve Univ. Press (Interscience)*, 214 p., illus., paper, \$5. Based on a special meeting of the Council on Documentation Research.

INTERDISCIPLINARY TEAM RESEARCH METHODS AND PROBLEMS—Margaret Barton Luszki—*National Training Laboratories, (New York Univ. Press)* 355 p., \$6. Summarizes ideas brought out in five work conferences.

LIGHT, VISIBLE AND INVISIBLE—Eduard Ruechardt—*Univ. of Mich. Press*, 3d ed. 201 p., illus., \$4.50. Summing up what we know today of the nature and behavior of light, how we found out, and how we use our knowledge.

THE LIVING BODY—Charles Herbert Best and Norman Burke Taylor—*Holt*, 4th ed., 756 p., illus., \$6.95. This new edition of a famous classic has been given a "new look".

MASS COMMUNICATION AND EDUCATION—Educational Policies Commission—National Education Association, 137 p., paper, \$1.50. Television is an effective aid to the teaching process, but there is no reliable evidence suggesting that it can solve the teacher shortage.

MATHEMATICAL THEORY OF COMPRESSIBLE FLUID FLOW—Richard von Mises, completed by Hilda Geiringer and G. S. S. Ludford—*Academic*, 514 p., \$15. For mathematicians and scientists.

MODERN COMPUTING METHODS—Philosophical Lib. 129 p., \$8.75. Part of a vacation course on computers for electrical engineering problems organized by the electrical engineering department of the Imperial College of Science and Technology.

NUCLEAR REACTIONS IN LIGHT NUCLEI—V. A. Davidenko and others—*Atomic Press, Moscow (Consultants Bureau)*, Supplement No. 5 of the Soviet Journal of Atomic Energy, in English Translation, 73 p., illus., paper, \$15. Reporting research in various laboratories of the Academy of Sciences in the USSR.

ONE MIND, COMMON TO ALL—Earl D. Bond—*Macmillan*, 200 p., \$4.50. The author, for 50 years a psychiatrist, writes charmingly of the normal in mental patients and the abnormal in the "well."

ORCHIDS OF PERU—Charles Schweinfurth—*Chicago Natural Hist. Mus., Fieldiana: Botany* Volume 30, Number 1, 260 p., illus., paper, \$4. Except for neighboring Columbia, Peru has the greatest number of orchid species recorded from any Andean country. This is the first attempt at a detailed description of the orchids of any Andean region.

PHYSICS—Henry Semat and Robert Katz—*Rinehart*, 927 p., illus., \$9. Text for students of science and engineering.

PHYSICS PROBLEMS—Clarence E. Bennett—*Barnes & Noble, College Outline Series*, 240 p., paper, \$1.75. Containing a review of basic principles as well as the solutions of 107 problems and answers to 372.

PREGNANCY, BIRTH AND ABORTION—Paul H. Gebhard, Wardell B. Pomeroy, Clyde E. Martin and Cornelia V. Christenson—*Harper and Hoeber*, 282 p., illus., \$6. Based on interviews with some 7,000 women concerning the number who became pregnant before marriage, during marriage or while separated, divorced or widowed, and the way their pregnancies ended. From Kinsey's Institute for Sex Research.

PROBLEMS IN INTERCULTURAL HEALTH PROGRAMS: Memorandum to the Committee on Preventive Medicine and Social Science Research—George M. Foster—*Social Science Research Council*, 49 p., paper, 50¢.

THE PROSPECT FOR NUCLEAR POWER IN PAKISTAN—Maurice D. Kilbridge—*Nat. Planning Assn.*, 59 p., illus., paper, \$1.

THE ROAD RUNNER—Theodore W. Munch and M. Vere De Vault—*Steck*, 30 p., illus. with drawings by Carol Rogers, \$1.50. A book for children about this strange-looking bird of the ranch country.

SCHOOL HEALTH SERVICES: A Selective Review of Evaluative Studies—Bronson Price—*Govt. Printing Office, Children's Bureau*, 149 p., paper, 45¢. For research and professional workers in this field.

SCIENCE AND RELIGION IN SEVENTEENTH-CENTURY ENGLAND—Richard S. Westfall—*Yale Univ. Press*, 235 p., \$4.50. Although there were a few dramatic 17th-Century conflicts, outright conflict between science and religion was abnormal.

THE SENSES—Wolfgang von Buddenbrock—*Univ. of Mich. Press*, 167 p., illus., \$4. Describing the differing "outside worlds" lived in by different species of creatures whose senses provide them with vastly different information.

A SHORT INTRODUCTION TO ARCHAEOLOGY—V. G. Childe—*Macmillan*, 142 p., illus., \$2.50. Archaeological data, explains the author, are the fossilized results of human behavior.

SPEECH CORRECTIONISTS: The Competencies They Need for the Work They Do—Romaine P. Mackie and Wendell Johnson and others—*Govt. Printing Office, Office of Education Bulletin* 1957, No. 19, 77 p., illus., paper, 45¢. Describing those who help more than 1,000,000 speech handicapped school children.

THE STRANGEST THINGS IN THE WORLD: A Book About Extraordinary Manifestations of Nature—Thomas R. Henry, introduction by Leonard Carmichael—*Public Affairs Press*, 200 p., \$3.50. Telling about such oddities as the emperor penguin, which hatches an egg by standing on one foot while holding the egg against the breast with the other foot.

STUDIES IN THE MATHEMATICAL THEORY OF INVENTORY AND PRODUCTION—Kenneth J. Arrow, Samuel Karlin, Herbert Scarf and others—*Stanford Univ. Press*, 340 p., \$8.75. Reporting research, most of which was done at Stanford University with the support of the Office of Naval Research.

TOWARD A HEALTHIER WORLD: Your Career in Sanitary Engineering—*Govt. Printing Office*, 16 p., illus., paper, 25¢. Guidance for the student who wants to plan a career.

THE WONDERWORLD OF SCIENCE: Book 7—Morris Meister and others—Scribner, rev. ed., 352 p., illus., \$3.12. A science text for seventh grade.

THE WORLD HEALTH ORGANIZATION: Its Global Battle Against Disease—Albert Deutsch—*Public Affairs Committee, Public Affairs Pamphlet* No. 265, 20 p., illus., paper, 25¢.

Science News Letter, May 31, 1958

PUBLIC HEALTH

Recommend Inoculations

► GOING ABOARD this summer?

Here is a list of the immunization vaccinations the U.S. Public Health Service recommends or requires before starting the big trip.

First of all, USPHS recommends typhoid and paratyphoid fever and tetanus inoculations for all international travel.

For those who are Europe-bound, the ground rules include smallpox vaccination in addition to the recommended inoculations. Typhus shots are advised for travelers to any of the Communist countries.

For the Asian-bound traveler, in addition to the general inoculations recommended, the USPHS also recommends smallpox, typhus, cholera and yellow fever shots.

Visitors to Africa are advised to obtain smallpox, typhus and yellow fever vaccinations.

For those who will travel the Americas, from Alaska to the southernmost tip of Chile, smallpox and yellow fever vaccinations are required by most of the countries.

Persons traveling directly to the Virgin Islands, Puerto Rico or Alaska from the United States, its possessions or territories, need not meet any of the vaccination requirements.

Travelers to the Oceania area, which includes Samoa, Australia, the Fiji Islands, Guam, Hawaii, New Zealand, Okinawa, Tahiti, the Solomon Islands and several others, are required to have smallpox shots. Several individual areas in this group also require yellow fever and cholera vaccinations.

The USPHS recommends that all travelers obtain their shots several weeks in advance of leaving the United States. Not only is time required to develop immunity after the shot, but the vaccination certificate is not valid until from six to 12 days, depending on the disease, after it is issued.

USPHS also recommends the booklet, "Health Hints for the Tropics," which can be obtained for 25 cents from the editor of *Tropical Medicine and Hygiene News*, National Institutes of Health, Bethesda 14, Md.

All immunizations, with the exception of the yellow fever vaccination, may be obtained from a private physician. Most vaccinations can be obtained either free or for a fee from state or local health departments. The USPHS publishes a list of these departments, one of which is near you.

Science News Letter, May 31, 1958

ARCHAEOLOGY

Unknown Indian Culture Produced Jade Carvings

► JADE CARVINGS excavated from long lost, jungle-buried cities in Mexico and Guatemala point to the existence of a little known but highly developed New World culture. It probably was well-developed long before the Aztec and Maya civilizations which date back to the early Christian era.

The creations of these Indian carvers rival and surpass those found elsewhere in the world, even Chinese jade carvings. This "presupposes a long and ancient artistic development during a civilization or culture of which we now know very little," reported the late Dr. William F. Foshag, former Smithsonian Institution curator of geology. One peak of jade carving was reached about 600 B. C.

The simplicity in line and shape of the early carvings was later lost. By the time the Spanish first reached Central America, the early, "pure" art was already declining. Soon afterwards the sources of the jade were lost. Recently, however, a deposit of jade has been located in Guatemala.

Today natives of the area have no knowledge or memory of jade and how it is carved. Even the folklore of the stone, "a jewel appropriate to the kings and gods," has apparently disappeared.

Dr. Foshag's report on the mineralogy of jade articles, published by the Smithsonian Institution, Washington, D. C., is based largely on the extensive collections of the Instituto de Antropología e Historia of Guatemala.

Science News Letter, May 31, 1958

Do You Know?

In the case of some *tuna* fishing it takes four lines, four poles, four men and one hook to bring in the big ones.

The Sukkur dam in Pakistan irrigates nearly 4,000,000 acres of wheat, cotton and rice fields and it is hoped to add another 1,500,000 acres to the area under cultivation in the near future.

The main reason *bread* becomes stale is that its starch crystallizes.

In the U.S. the total annual harvest of all *fishes* for the last few years has approximated five billion pounds.

The *skin* is the largest organ of the body and, next to the brain, the most complicated.

Tantalum is one of the rare metals but it has great utility in industry.

A British firm has designed a 700-pound four-seater jeep-type *vehicle* that folds into a nine-foot-long box which can be parachuted from an airplane.

This year, the U.S. Government will spend about two billion dollars for *missiles*.

Rocket firings have explored the area between 46 and 160 miles above the earth's surface, a portion of the atmosphere out of reach for balloons and below the level of satellite orbits.

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PSYCHIATRY

Open Door Helps Mental Patients to Get Well

► THROWING OPEN the doors and taking off the window bars of a mental hospital has had a healing effect on the minds of the patients, Dr. Herman B. Snow, director of St. Lawrence State Hospital, Ogdensburg, N. Y., told the American Psychiatric Association meeting in San Francisco.

It is not a panacea, explained Dr. Snow, but it does reinforce all other types of treatment—psychotherapy, occupational and recreational therapy, electric shock, tranquilizing drugs and any other.

The "open door" is considered an important factor in the increase of the release rate, especially of patients hospitalized for more than five years or even up to 30 years.

Doors were first opened at St. Lawrence after 1955. Now, 95% of the resident patients are in open door ward areas. Ward doors were unlocked regardless of the type of patients and with little or no selection. The doors are unlocked for at least eight hours during the day and the patient is permitted to leave at will. Many wards stay open as long as 12 hours a day and are locked only at night as private homes are.

With the doors wide open, there have been no real problems of escapes, homicides, suicides, sex or alcohol, and there have been no legal difficulties.

Science News Letter, May 31, 1958

GENERAL SCIENCE

Midwest Universities Join At Argonne Laboratory

► TWENTY-SIX EDUCATIONAL and research institutions have organized the Associated Midwest Universities to facilitate the use of Argonne National Laboratory and promote research in all branches of science. Dr. James H. Jensen, Iowa State College provost, is the first president.

Science News Letter, May 31, 1958

Questions

ASTRONAUTICS—How long has the weightlessness scientists expect man will encounter in space travel been duplicated on earth? p. 338.

ASTRONOMY—When does the moon appear to be greenest? p. 343.

ENTOMOLOGY—What two insecticides have been used to curb the fire ant invasion? p. 341.

MEDICINE—What compound is injected into a patient's vein to test for diabetes? p. 344.

Photographs: Cover, British Information Service; p. 339, Yale University; p. 343, The American Museum of Natural History; p. 346, World Health Organization; p. 352, Moon Manufacturing Co.

PSYCHIATRY

Pacific Islander Would Be Psychopath Here

► THE PERSON who is considered perfectly normal on the Pacific island of Truk would be called a psychopath if he lived in Washington, D. C., Dr. Thomas Gladwin of the National Institute of Mental Health told a Washington Academy of Sciences meeting.

In considering the development of personality of any individual, he said, it is necessary to consider the kind of culture in which that individual grew up.

On Truk, the child is taught to do what the family or larger kin group expects him to do. The Trukese manner of bringing up children does not result in development of a "conscience" for controlling behavior from within as child training in the United States does.

If the person on Truk does not do what is expected by his kin group, he is in danger of being thrown out of his kin group and so of having his supply of food and other essentials removed—a very serious punishment.

Dr. Gladwin has made a study of normal and abnormal personality development in various cultures, and has studied particularly the island of Truk.

Science News Letter, May 31, 1958

PHYSICS

British Scientists Admit H-Bomb Untamed

► THE INTERNATIONAL race to tame the hydrogen bomb for peaceful uses is still open. Scientists in Great Britain have admitted failure in their earlier attempts at achieving the world's first controlled thermonuclear reactions. (See SNL, May 17, p. 307.)

Dr. B. F. J. Schonland, director of the Atomic Energy Research Establishment at Harwell, England, said the energy emitted as neutrons from the Zeta apparatus came mainly from fusion of accelerated particles rather than from true thermonuclear fusion of uniformly agitated particles. (See SNL, May 17, p. 307.)

However, Dr. Schonland reported, the British scientists would continue to concentrate on using the Zeta principle in trying to get controlled thermonuclear fusion of deuterium nuclei.

Science News Letter, May 31, 1958

AERONAUTICS

English Jets Show Their Maneuverability in Tests

See Front Cover

► THE INTERNATIONALLY famous aerobatic team of Number 111 squadron, Royal Air Force Fighter Command, is preparing for its summer displays. These will be given in Great Britain and western Europe.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows the black Hawker Hunter jets "stand on their tails" as a line-abreast loop is done high above the team's base at North Luffenham, Rutland, England.

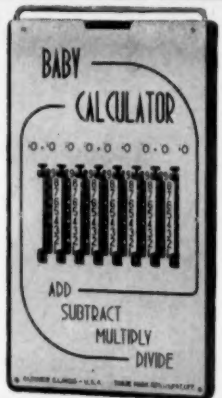
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VITAMIN A

25,000 Units

100 for . . . 75¢

250 for . . . \$1.75

1,000 for . . . \$7.00

50,000 Units

100 for . . . \$1.45

250 for . . . \$3.35

1,000 for . . . \$11.50

"RED" VIT. B₁₂

25 MCG.

100 for . . . \$1.25

250 for . . . \$2.50

1,000 for . . . \$8.50

50 MCG.

100 for . . . \$2.25

250 for . . . \$4.50

1,000 for . . . \$16.50

VITAMIN E

30 Int'l Units

100 for . . . \$1.35

250 for . . . \$3.10

1,000 for . . . \$11.00

50 Int'l Units

100 for . . . \$2.25

250 for . . . \$4.50

1,000 for . . . \$17.50

100 Int'l Units

100 for . . . \$3.25

250 for . . . \$6.50

1,000 for . . . \$26.25

ADD TO EFFECTIVENESS OF THERAPEUTIC VITAMINS by Combining with ESSENTIAL MINERALS

All in a single tablet! Similar standard formulas would cost you \$5 per 100 more!



Each Ultims Tablet Contains:

Vit. A . . . 25,000 units	Calcium . . . 105 mg.
Vit. D . . . 1,600 units	Phosphorus . . . 60 mg.
Vit. B-1 . . . 15 mg.	Iodine . . . 0.15 mg.
Vit. B-2 . . . 2 mg.	Manganese . . . 0.5 mg.
Vit. B-6 . . . 0.1 mg.	Cobalt . . . 0.1 mg.
Niacin A . . . 150 mg.	Potassium . . . 5 mg.
Niacin B . . . 10 mg.	Molybdenum . . . 0.5 mg.
Cal. Panto . . . 6 mg.	Copper . . . 0.1 mg.
Vit. B-12 . . . 0.34 mg.	Magnesium . . . 10 mg.
Folic Acid . . . 0.34 mg.	Zinc . . . 10 mg.
Mixed Tocoph. . . 5 mg.	Iron . . . 15 mg.
(1.25 Int'l U. Vit. E)	

SALE PRICED!

30 Tablets, \$ 1.75
250 Tablets, \$10.50
1000 Tablets, \$36.50

VITAMIN B₁

25 MG.

250 for . . . \$1.15

1,000 for . . . \$4.00

50 MG.

100 for . . . 75¢

250 for . . . \$1.75

1,000 for . . . \$6.00

100 MG.

100 for . . . \$1.25

250 for . . . \$2.50

1,000 for . . . \$9.00

VITAMIN C

100 MG.

250 for . . . \$1.00

1,000 for . . . \$3.00

250 MG.

100 for . . . 85¢

250 for . . . \$2.00

1,000 for . . . \$6.50

500 MG.

100 for . . . \$1.35

250 for . . . \$2.75

1,000 for . . . \$11.00

If the vitamins or vitamin-mineral combinations you are now using are not listed here, send for our catalog of over 150 vitamin products and health aids . . . all at tremendous Mid-Summer Sale savings!

Vitamins listed are sold only at the addresses below. We pay all postage. Order C.O.D. or save all charges by sending check or money order. Money back if not satisfied.

VITAMIN-QUOTA

Prescription Specialists and one of the world's largest distributors of Vitamins. Estab. 1923. Serving over 2,000,000 families, coast-to-coast.

Dept. T-381, 880 Broadway, New York 3, N. Y. or
Dept. T-381, 1125 Crenshaw Blvd., Los Angeles 19, Cal.

Sales in Calif. add 4% to total of order.



• New Machines and Gadgets •

For sources of more information on new things described, send a self-addressed stamped envelope to SCIENCE NEWS LETTER, 1719 N St., N.W., Washington 6, D. C., and ask for Gadget Bulletin 937. To receive this Gadget Bulletin without special request each week, remit \$1.50 for one year's subscription.

✿ **STATIONARY DRUM REEL** for fishermen works on ball bearings and silent helical gears. A British development, the reel is made of an aluminum alloy rust-resistant casing. The drum holds 250 yards of nine-pound breaking strength nylon monofilament line.

Science News Letter, May 31, 1958

✿ **THERMOMETER-PEN COMBINATION** is designed to save time and energy. The metal encased pen is a ball-point type. The thermometer is housed at the opposite end, well-protected against damage.

Science News Letter, May 31, 1958

✿ **STERLING MONOGRAM JEWELRY** for Dad offers a choice of any two letters on an item. Made of heavy gauge silver, each piece is individually cut out, hammered, formed and hand-rubbed. Buckles, tie clips, cuff links, key chains and rings are available.

Science News Letter, May 31, 1958

✿ **JUMPING SHOES** for junior permit him to bounce along his merry way. The spring-based shoes, shown in the photograph, are equipped with protecting caps and are adjustable to fit over any conventional shoe. Rubber shock bumpers are also provided.



The bouncing shoes are designed for boys and girls, ages six to 12 years.

Science News Letter, May 31, 1958

✿ **LAWN RAKE** that weighs less than one pound is molded of a polyethylene plastic. The rake has 18 flexible prongs. A re-

inforced bar holds the prongs in shape. Unaffected by temperature changes, the rake will not corrode and is highly resistant to lawn chemicals and fertilizers.

Science News Letter, May 31, 1958

✿ **TRANSPARENT BANDAGE** is designed for wear on the face, under hose and on other exposed body areas. The medicated, non-stick pad that is placed next to the cut or bruise is flesh color. The bandages are available in a re-usable transparent plastic case.

Science News Letter, May 31, 1958

✿ **FISH PHONE** is a listening device to help anglers locate fish. To use it, a hydrophone is lowered into the water and the volume amplifier set. By listening through earphones, the angler can listen in on fish in the area. The bearing or direction of the fish can also be found.

Science News Letter, May 31, 1958

✿ **SYNTHETIC BONE** for Fido is made of a plastic nylon resin. Designed to provide chewing exercise, the ersatz bone is impregnated with a hambone scent not discernible to humans. The bone can be sterilized by boiling without affecting its scent.

Science News Letter, May 31, 1958



Nature Ramblings



By HORACE LOFTIN

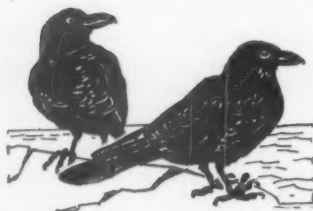
► MEN have never gotten along well with crows, although these black birds thrive well enough near the company of humans. The reason may lie in the stiff competition that crows give us.

Henry Ward Beecher once summed up the matter by saying that if men wore feathers and wings a very few of them would be clever enough to be crows.

There are undoubtedly many more crows in the United States now than before white men came with their axes and plows. Many forest and water fowl have retreated before the advance of civilization, but not the crow.

This black rascal thrives on the farmer's seeds and tender plants and the refuse of cities. He is responsible for a certain amount

Black Rascal



of damage to songbirds and waterbirds because of his penchant for stealing eggs.

From the point of view of human economics, the crow probably qualifies easily for the title of "pest."

On the basis of both economics and game

management principles, crows remain high on the list for control. Their numbers are expanding out of proportion, to the detriment of our other birds, and limited reduction of the population is probably warranted.

However, the crows will have something to "say" about this matter. They have been successfully pitting their intelligence against men for thousands of years. They very likely will hold their own against any modernized scarecrows, explosives, electronic devices or other attempts by men to reduce their numbers significantly.

This may not be so bad, after all. Of all the species of birds, perhaps the crows are the greatest individualists. They are often a source of pleasure and interest to watch.

Maybe we should accept the crow—he has certainly accepted us.

Science News Letter, May 31, 1958

